

Serial No.: 10/674,220
Examiner: Andrew W. Chriss

REMARKS

In a January 27, 2010 final office action, Examiner rejected claim 1 (the only independent claim) under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,061,876 ("Ambe") in view of United States Patent Application No. 2003/0223358 ("Rigby") and further in view of U.S. Patent No. 5,253,248 ("Dravida"). The Examiner also rejected claim 1 under 35 U.S.C. 112.

Claim 1 includes a "receiving a packet, wherein the packet comprises a route indicator field further comprising at least one bit that indicates a link type" limitation and a "responsive to the packet being received after a time of failure along a communication link between two of the plurality of nodes and in response to an automatic change of state of the at least one bit that indicates the link type in the route indicator field, transmitting the packet along a second route in the system to another node in the plurality of nodes, wherein the second route differs from the first route and is identified prior to the time of failure" limitation.

In describing these limitations involving a route indicator field, the application states in relevant part:

Figure 2 illustrates a packet format 20 according to a preferred embodiment and for use in connection with system 10 of Figure 1a. Packet format 20 includes various fields as known in the Ethernet art, and only some of which are shown by way of example. These fields include a source address field 20₁, a destination address field 20₂, a length field 20₃ and a data payload field 20₄. Other fields, although not shown, may be included as also known in the art, such as a preamble and a packet (or frame) start field. According to the preferred embodiment, however, packet format 20

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includes an additional field 20₅, referred to hereafter as a link type field 20₅. Link type field 20₅ is so named because, as shown below, the state of the field indicates the type of link on to which the packet is routed, with one state in field 20₅ (e.g., 0) indicating a spanning tree link and another state in field 20₅ (e.g., 1) indicating a bypass link along system 10. In the preferred embodiment, link type field 20₅ is a one-bit field and it is contemplated that it could be a bit provided as an addition to existing Ethernet frames or, alternatively, it could be a bit that is already in the Ethernet frame yet where the function of that bit is changed to be consistent with the functionality described in this document as relating to link type field 20₅.

See Patent Application, p. 9. The application further states:

When a failure occurs in a link in system 10, that failure is detected according to known protocols. However, as an enhancement in a preferred embodiment, in response to the failure detection, a node within system 10 changes the state of link type field 20₅ so that each packet so changed will be routed along a bypass link, where recall by way of example that a binary value of 1 in link type field 20₅ causes this effect. Further, when a node within system 10 receives a packet with a binary value of 1 in its link type field 20₅, the receiving node does not consult its forwarding table for purposes of further routing the received packet, but instead it consults its bypass table to determine the next route for the received packet.

See Patent Application, p. 11. The route indicator field is further defined by Applicant as follows:

In system 10, the route indicator field is a link type field 20₅, operable to indicate that the packet is to continue along a spanning tree route or a bypass route. In system 10', the route indicator field is a link set field 20'₃, operable to indicate that the packet is to continue along a first set of links

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forming a first route, a second set of links forming a second route, and so forth for up to 2^M sets of links corresponding to a respective number of 2^M routes.

Dravida is cited as disclosing the “receiving a packet, wherein the packet comprises a route indicator field further comprising at least one bit that indicates a link type” limitation and the “responsive to the packet being received after a time of failure along a communication link between two of the plurality of nodes and in response to an automatic change of state of the at least one bit that indicates the link type in the route indicator field” limitation of claim 1.

However Dravida only discloses marking a bit in the header of packets that are routed on an alternate path for the purpose of giving lower priority to these packets to allow them to be dropped when a buffer at a node subsequently receiving these packets is full. Neither Dravida nor the other cited prior art discuss at least one bit that is located in a route indicator field or one bit that undergoes a state change in response to a node detecting a link failure wherein that bit is subsequently used to notify all future receiving nodes to route the packet on their backup route (“in response to a change of state of the at least one bit” and “transmitting the packet along a second route in the system to another node in the plurality of nodes, wherein the second route differs from the first route and is identified prior to a time of failure.”)

Examiner also rejected independent claim 1 under 35 U.S.C. 112 because of confusion over the phrase “automatic change of state.” The “automatic change of state of

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the at least one bit that indicates the link type in the route indicator field" limitation has been amended to state "a change of state of the at least one bit that indicates link type in the route indicator field in response to a node detecting a link failure."

Applicant respectfully requests the Examiner withdraw the rejection and allow pending amended Claim 1. In addition, all claims depending from amended Claim 1 either directly or indirectly, including Claims 2-20, are also allowable for the reasons discussed in conjunction with amended Claim 1.

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Applicant has made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for reasons clearly apparent, Applicant respectfully requests full allowance of all pending claims. If there are any matters that can be discussed by telephone to further the prosecution of this Application, Applicant invites the Examiner to contact the undersigned attorney at 512-306-8533 at the Examiner's convenience.

Respectfully submitted,

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